THE JOURNAL OF SCHOOL HEALTH

Vol. XIII JUNE, 1943 No. 6

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THE JOURNAL OF SCHOOL HEALTH

Published monthly, except July and August, at Buffalo, N. Y.
THE AMERICAN SCHOOL HEALTH ASSOCIATION
3335 Main St., Buffalo, New York

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SUBSCRIPTION RATES TO THE JOURNAL
Memership dues, $2.00, including $1.75 subscription. Subscription $1.75.
Single copies 25c

Address all communications to
THE EDITOR, 3335 Main Street, Buffalo, New York

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The American School Health Association

Entered as second-class matter at the Post-Office at Buffalo, N. Y.
October 5, 1937

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THE JOURNAL OF SCHOOL HEALTH

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Vol. XIII JUNE, 1943 No. 6

THE PROBLEM-SOLVING EMPHASIS IN A COURSE IN HEALTH EDUCATION: ITS IMPLICATIONS AND MEHODS*

RUTH STRANG

Professor of Education, Teachers College, Columbia University

Americans tend to think in terms of problems. To them almost every situation offers a beautiful problem to be solved. That is the way in which their practical pioneering minds work. In this tendency they have been reinforced by psychologists, philosophers, and educators such as William James, John Dewey, and William H. Kilpatrick. Clearly the method of problem solving is in accord with the tradition and the temperament of the American People.

The method of problem solving is also in accord with principles of modern psychology.[1] In a sense, all learning starts with a problem—with some felt need for adjustment. The process of problem solving is then directed by the demands of the situation, or by the student's formulation of the problem as it evolves, or by a goal or purpose, such as, for example, the vital current goal of physical fitness for war service. Insight leading to a solution of a problem arises out of related experiences within the student's capacity to comprehend and a reorganization of those experiences so that he may extract from them useful generalizations or principles. Thus learning progresses from successful solutions to more successful solutions. Problem by problem, the student grows in problem-solving skill.

Sanctioned by psychology, problem solving is increasingly becoming a method of modern education. In the May 1943 issue of *School Review* the following statements, related to the problem-solving method, received almost unanimous approval by the faculty of the University High School, University of Chicago:

Learning is likely to be more permanent—when it is

*Paper read at the Institute on Health Education in the Senior High School, May 15, 1943, at Boston University, Boston, Mass.

1. William A. Brownell, "Problem Solving" in the Forty-First Yearbook of the National Society for the Study of Education, Part II, *The Psychology of Learning*, pp. 415-443. Bloomington, Illinois: Public School Publishing Company, 1942.

self-initiated and self-directed [and] . . . when it is motivated by intrinsic values.

Greater all-round development of pupils is likely to result from a policy which stresses—assuming responsibility [and] . . . finding things out for one's self.

The power to think is more likely to be developed by—attempts to solve problems of real life.[2]

Problem solving, however, is more than an effective method of learning; it is a means by which changes are being made in the health of individuals and of communities. This, of course, is the end toward which we, in the field of health education, work.

The Problem-Solving Process

There are two major elements in problem solving: (1) meanings and understandings and (2) techniques of problem solving. Meanings and understandings are acquired, as has already been suggested, through a wide variety of experiences appropriate to the needs and capacities of the individuals. These experiences become most valuable for solving problems when they have been organized and summarized and general principles extracted from them. Techniques of problem solving likewise should be appropriate to the individual student. Instead of beginning with Dewey's steps of thought, which represent the way in which a gifted philosopher thinks, the teacher should start with the techniques which students are using with some success and gradually help them to develop more mature methods of solving health problems.

More specifically, the following features are involved in the complete problem-solving process:

1. *Choice of problem*—It should be a health problem that really makes a difference in the lives of people. Local problems in the school and in the community should have a prominent place in the health education program. The importance of the problem should be recognized by the class or group. Each problem should have immediate value to the student, while it may also give him a vision of new problems to be solved in the future through study and research.
2. *Formulation of problem*—The problem should be clearly stated in the student's own words. The initial statement may be modified as the study of the problem progresses. As it is so easy to go off on a tangent, groups often need help in keeping

2. Stephen M. Corey and Paul B. Jacobson, "A High School Staff Studies Its Philosophy," *School Review*, LI (May, 1943), 271.

the problem continuously in mind.

3. *Mobilization of the students' previous knowledge and experience*—In starting work on a health problem, the teacher should begin where the students are, utilizing whatever they have already learned in school and outside of school. Teachers often underestimate students' extra-school experience. From this backgrwound the leader can draw suggestions and principles which can be applied to the problem to be solved. Thus they build on previous knowledge and experience.
4. *Cooperative effort*—Because a wide variety of ability and experience is represented in every class or group, cooperative effort is necessary. Each student can make some unique contribution to the solution of the health problem.
5. *Evaluation of Suggestions*—As all suggestions offered will not be equally useful, each must be evaluated. This step involves testing each suggestion in the light of known facts and results of experiment, and thinking through possible consequences of carrying out the suggestion.
6. *Making and carrying out the best plan for solving the problem*—The study of the problem as outlined should lead directly to a practical solution or to a preliminary stage necessary for a final solution. Committees should be formed or individuals appointed to carry out each part of the plan.
7. *Evaluation of the whole process*—The summary, testing, and evaluation of the process is important for future problem solving as well as for the solution of the immediate problem. In this step students should become aware of the practical results they have achieved, of the process by which the results have been achieved, of the relationship of this problem to other problems and to the health program as a whole. Thus details will be synthesized, patterns of problems appreciated, and experiences and methods useful in solving new health problems acquired.

Some Persistent Present Problems

In addition to the specific local health problems which will be recognized and reported by students, teachers, nurses and other health workers, and parents, there are certain problem areas common to schools and communities all over the country. In discussing health education with representatives of the Armed Forces, the committee appointed to prepare the Victory Corps manual, *Physical Fitness Through Health Education*,[3] decided upon six pre-

3. Office of Education, Washington, D. C., 1943.

valent problem areas, important for effective war service and for the best development of children.

1. Correction of remediable defects.
2. Prevention and control of communicable diseases.
3. Improvement in nutrition.
4. Prevention of accidents and training to assist in giving emergency care
5. Daily program planning to provide a balance of work, exercise, recreation, rest and sleep.
6. Development of sound mental attitudes.

This list, formulated with wartime conditions in mind, confirms the soundness of the basic health education programs which have been effectively carried on for many years.

Problem-Solving in a Course in Health Education

A series of vital problems becomes a course in health education when there is progression of experience, synthesis of detail, unification of units, the acquisition of knowledge and techniques necessary for the solution of further problems, and appreciation of health problems still to be solved by study and research. Such a course in health education combines the perspective given by a map of values based on extensive curriculum research with the vitality and practicality of an attack on health problems recognized as important by the students of each grade. If the teacher has in mind the sequence of knowledge and experience necessary for individuals who are to attain the best health possible for them and their communities, she can help the students in her class to choose from among the many health problems confronting them the ones which will contribute most to their present stage of education. With this emphasis on local and immediate problems, it is especially necessary that each teacher keep a record of the health education experiences of her class to pass on to the next teacher as a foundation on which to build the course for the following year.

Some Specific Problems

In the classroom each year specific problems, some local, some national in scope, will be chosen for study. The following are a few scattered examples of specific problems that have recently been raised:

1. "Absenteeism is increasing in our school as it has been increasing in industry. What can we do about it?"

   In one school this problem of absenteeism is being attacked by the student council.

   First they explored the possible causes—poor health, at-

tempts to find a job, dissatisfaction with school, unhappy relations with teachers and pupils, or other factors. With the help of other students, members of the Council prepared a short interview schedule including such questions as "Why were you absent? Could the absence have been prevented? Just how could similar absences be prevented in the future?" Members of the Student Council will take responsibility for interviewing every student who is absent and for summarizing the findings by class or grade groups. They will bring the problem and its solution to the attention of all the students by charts and graphs; assembly, homeroom, classroom, and parent programs; posters and pamphlets; and individual conferences with students who continue to be absent unnecessarily. This study of absenteeism may lead to improved curriculum and instruction, to more appropriate school programs for individual students, to reorganization of students' twenty-four hour schedule, to better health habits, and to more sanitary conditions in the home and community. In the effective application of the problem-solving method students follow up their analysis, wherever it may lead, to the point of an actual solution.

2. "Why do people not eat more foods containing thiamin when experiments have shown it is essential for good health and growth?"

   This question was raised by a group of gifted sixth-grade children after they had studied experiments on vitamin B_1. In the discussion of the problem the following suggestions were made and acted upon:

   "I think the reason that people do not eat more foods containing thiamin is that they are not well informed about this vitamin."

   "I think we ought to tell our mothers about vitamin B_1 and they can tell other mothers."

   For these children *vitamin*, instead of being an abstract word, had become a concrete and useful tool for health and growth.

3. "How can we make the most of our lunch hour?"

   This problem was discussed in every homeroom in one junior high school, with physical education teachers, dramatics coach, lunchroom manager, nurse, music teacher, and others who had specialized knowledge relating to the problem. They discussed what they wanted to get out of their noon hour—fun, relaxa-

tion, new or better friendships, knowledge and practice in social usage, skill in games and other recreational activities, and practice in leadership. They then suggested various activities—table tennis, shuffleboard, bowling, deck tennis, dramatics, sings, motion pictures, picnic lunches, walks, sunbaths in steamer chairs, storytelling. Each activity proposed was evaluated in the light of the objectives set up. Committees were appointed to plan publicity through announcements in gym classes, bulletin boards, and school paper, and to provide equipment for and organize each activity.

4. "We are supposed to do our regular school work; take extra first aid, home nursing, and pre-induction courses; render some community service, assist in various drives and other wartime activities. How can we find time for everything?"

   This is a problem which many boys and girls are facing and one which has important health aspects. Each student in the class has some experience to contribute to the solution of this problem. The first step might well be the presentation and evaluation of experiences, out of which should come a variety of solutions. In order to have an adequate basis for evaluation, students might study or review their knowledge of the efficient use of their body as a machine and gain a new understanding of what fatigue is and how to deal with it. As the scheduling of one's time is an individual matter, each student should try to incorporate into his own daily plan the sugguestions which are appropriate in his case. These individual schedules may, if the student wishes, be submitted to the class for their approval or suggested modifications. Having obtained the sanction of the group, the student will be reinforced in his determination to follow the schedule planned.

5. "Injuries in industry have risen out of all proportion to increase in employment and work hours. What can students in high school do now to reduce the number of industrial accidents?"

   Students should first recognize the seriousness of industrial accidents from the standpoint of war production. It is impressive to know that, in 1941, 480 million man days were lost through accidents—enough manpower to build 20 more battleships, 100 more destroyers, 9,000 more bombers, and 40,000 more tanks. Facts such as these reinforce the importance of the problem under discussion. Students will then be eager to collect facts on the causes of these accidents from the National

Safety Council magazine and bulletins, from newspaper and magazine clippings, from firsthand accounts by persons whom the students know. After having the facts about the causes of industrial accidents and how employers and employees may work together to prevent them, the students will make definite plans for accident prevention in industry. They will take responsibility for carrying out safety measures in their school shops; they will make definite plans for preventing accidents in the kinds of work in which they are soon likely to engage; they will tactfully pass on their information through conversation, posters, radio skits, and printed or mimeographed leaflets to persons now engaged in industry. From time to time they will report back to the class their success and the difficulties encountered. By this pooling of experience they can continuously make their plans function more effectively.

6. "The younger adolescents are getting into serious difficulties. They want to have the experiences their older brothers and sisters are having, but they are not emotionally and intellectually ready for them. They are too old for dolls, too young for romance. Tragic things are happening to girls as young as twelve, thirteen, and fourteen years."

   This is a problem that can be attacked both by the younger girls themselves on their level of knowledge and experience and by the older boys and girls whose influence and example are so important.

7. "What can be done about the widespread promotion of the sale of alcoholic beverages? The brewers and distillers are making the war their golden opportunity—their chance, as the *Brewers' Digest* for May 1941 said, 'to cultivate a taste for beer in millions of young men.' What should we do to resist this influence?"

   The problem-solving method can be applied in all its steps to this international problem and evidence obtained from many sources.[4] The opinions of the students themselves sometimes carry more conviction than bare facts: In a discussion about drinking a ninth-grade girl asked, "What is a good thing to drink if you are not used to drinking?" One boy who was looked upon by the rest of the class as being more of a man of the world than most of them, said, "Drink a gingerale. No

4. For wartime significance of the problem see "We Are at War" by George Barton Cutten; a copy may be obtained from the Cutten Speech Committee, 1703 Chestnut Street, Philadelphia, Pennsylvania.

man likes a girl who is drunk." Then other boys expressed their opinions quite firmly about girls who got drunk. A sigh of relief arose among the boys when one said, "If the girl would only have enough sense to order a gingerale, I could have one, too, and save my money." The implications of the consumption of alcoholic beverage as it is related to food, rubber, and gasoline conservation, accident prevention, manpower shortages, military defeats, mental diseases, and social welfare should be presented by committees of students who are willing to make a study of each of these factors.[5]

8. "What diseases are likely to be most dangerous to our men fighting in foreign countries? What should they know about the prevention and treatment of these diseases?"

This is an international health problem which students may study with enthusiasm. Yellow fever and typhus, malaria, hookworm are serious dangers to our men in countries in which they are now fighting. The booklets prepared by the Special Service Division, Services of Supply, U. S. Army, contain information on this problem. Newspaper and magazine clippings present timely developments. Work on this problem would serve as an excellent review of basic facts in the control of disease and in progress that has been and is being made.

Because war conditions influence adolescents more directly and more strongly than children, these illustrative problems are largely taken from junior and senior high schools years. The problem-solving method, however, is equally applicable to the elementary school years. Children in the primary grades have real health problems such as getting ready to play out of doors, relaxing when tired, eating their midmorning lunch, and protecting others from colds. They can find a solution of these problems, building on their familiar experiences and understandings.

Important as problem solving is in the learning process, it is not the only method to be employed in a program of health education. There is a place for gaining knowledge and appreciation through books and articles, talks, pictures, visits, and stories. There is a place for practice in good health habits in an environment conducive to healthful living. There is a place for building ideals of moderation in all things and of

5. For a detailed account of the problem solving method in an actual classroom, see *Child Development and Guidance in Rural Schools*, pp. 115-121, by Ruth Strang and Latham Hatcher, New York: Harper & Brothers, 1943.

service for which health is a requisite. There is a place for guidance in all the ongoing daily activities as well as in personal conference. As the core of the health education course, problem solving occupies an important place in helping students to recognize health problems, to mobilize their experiences and knowledge in solving real problems, and, through this process, prepare themselves to meet new personal and community health problems successfully.

* * * * *

Raw Milk Responsible,—An outbreak of fifty-six known cases of severe sore throat, due to the consumption of raw milk, occurred early in March in a village in Saratoga County, New York. Although the epidemiological investigation has not been completed, it is estimated on the basis of the number of consumers of the suspected milk that a total of 130 persons was affected.

The illness was characterized by acute onset, marked sore throat with considerable purulent exudate, enlarged cervical glands and, frequently, generalized symptoms including chills, fever, and considerable prostration. The attack rate among persons drinking the incriminated milk was 36.4 per cent for those under fifteen years of age and 44.1 per cent for those over fifteen years.

The sequence of the investigation is interesting since it illustrates the importance of alertness on the part of the local health officer in bringing about early control of such outbreaks. In this instance, the health officer suspected an outbreak when 5 cases of sore throat, with onsets within a three-day period, occurred in his practice. Inquiry revealed that the milk supply of these patients was from a common source. It was this bit of evidence that led to further investigation by the State Department of Health.

A house-to-house survey of a portion of the village showed that there were 34 cases among 79 consumers of milk from the implicated dairy and no cases among 55 consumers of milk from other dairies. Pasteurization of the suspected supply was instituted immediately, and no additional cases have been reported with onsets occurring more than forty-eight hours after pasteurization was begun.

Inquiry thus far has uncovered evidence of mastitis among some of the milking cows, although the human source of the infection of the herd has not yet been ascertained. Laboratory studies are in progress. Health News, N. Y. State Dept. of Health, March 22, 1943.

PHYSICAL FITNESS PROGRAM FOR SENIORS LOS ANGELES CITY SCHOOLS

C. MORLEY SELLERY, M.D., Los Angeles

The school health worker looks on the graduate from high school as the more or less finished product of the combined health efforts of the home, the school, and the community, and sometimes the product is not so finished.

Health and physical education personnel have had a feeling of failure and frustration when the young people under their supervision have not achieved by graduation from high school the finest physical development and the most robust health of which they are individually capable. The published reports of the medical examinations of the draft have not increased our satisfaction with the results of our nation wide health and physical education programs.

With the entrance of the United States into the war the importance of a special physical fitness program in our high schools became still more obvious (I say this with the full realization that from kindergarten to junior college the school health program has always been a physical fitness program). The responsibility of the schools for developing a generation of strong, virile, tough, physically-fit youth, free from physical defects, suddenly became crystal clear to the nation. Support, even agitation from all directions for a more thoroughgoing physical fitness program in our schools burst upon us although not always accompanied by the budgetary requirements for its accomplishment.

For years the school physicians in Los Angeles have given as much time as could be judiciously devoted to the high school graduating classes. It was, shall we say, our last chance to put over our health message, our final opportunity for stimulating the care of correctible physical defects, for sending our young people forth in as excellent physical condition as possible—to be self-directing in matters of health. We decided, however, taking advantage of the new wave of pupil, parent, and teacher interest in physical fitness, to intensify our efforts.

The first step called for close collaboration with the physical education department which had already revamped its program, placing emphasis on those activities which would promote endurance, skill, agility, initiative, and combativeness. In order to motivate the program and to stimulate a determined effort on the part of the senior student to achieve a high degree of physical fitness

as rapidly as possible, various motivating devices were set up.

At the beginning of the semester all senior A students were given a physical check-up to determine:

1. Their physical fitness for an intensified physical education program and the presence, if any, of correctible physical defects.
2. Their aptitude in certain important athletic events indicative of the degree of co-ordination, skill, muscular development and endurance already achieved by the individual student.

The physical examinations were made by the school physicians and dentists assisted by the school nurse and corrective teachers, and the aptitude tests were performed under the direction of the physical education teachers.

All students were given a final re-check just prior to graduation by the physical education teacher and the school physician. The aptitude tests were repeated to determine progress in skill, robustness, and endurance. All students who had corrected physical defects in accordance with the recommendation of the school physician and dentist and who had met the required standard of health and physical fitness were granted health certificates on graduation.

In order to encourage students with irremediable defects or severe physical handicaps either hereditary or acquired which left the student with little hope of achieving the standard for a physical fitness award, students were informed that those who, on account of some uncorrectible physical defect or handicap, were not able to meet the health standard for a physical fitness certificate would be granted appropriate grades in physical education in recognition of their co-operation and improvement in health.

In order to initiate a program in all the high schools which would be fairly well standardized and which would get under way immediately at the beginning of the semester the following outline of procedure was sent to each principal:

1. Personnel of physical fitness program:

School physician	Corrective physical education teacher
School dentist	Physical education teacher
School nurse	Student secretaries from the secretarial course
Health co-ordinator	Student monitors

2. Meeting of principal with personnel to plan program and arrange details of procedure such as
   a. Physical examination by school physician

b. Eye and ear tests by school nurse
c. Dental inspection by school dentist
d. Physical aptitude tests by physical education teacher
e. Posture and foot examination by corrective teacher
f. Weighing and measuring by teacher with student help
g. Provision for absence, tardy, and office summons slips
h. Allocation of secretarial and monitor help
i. Delegating responsibility for providing physicians with students for examination at times and in numbers decided on by the personnel (8 to 10 students per period is the maximum which can be checked satisfactorily)
j. Arranging facilities and obtaining students for dental inspection (15 to 20 per period)

3. Getting results in terms of health and physical fitness
   a. Students should be inspired to feel that it is their patriotic duty to achieve the height of physical fitness of which they are individually capable.
   b. Physicians, nurses, and teachers will stress the importance of correcting physical defects.
   c. A notice of the physicians' and dentists' findings will be sent to parents.
   d. Conferences between parents and school personnel will be arranged when necessary to get action.
   e. A physical fitness certificate will be awarded only to those who achieve the required standard of health and physical fitness.
   f. The awards committee should consist of the principal, the school physician, the health co-ordinator, the corrective and physical education teachers, and any other teacher designated by the principal.

4. Physical fitness award

The proposed health and physical fitness certificate is an award for reaching a definite standard of health and physical fitness.

The certificate is being made to fit the high school diploma folder.

It is suggested that the names of the graduates who receive a health certificate be starred on the graduation program.

Students to be eligible for the certificate

a. Must have corrected all correctible physical defects, e.g., dental, visual, diseased tonsils, etc., as recommended by the school physician and dentist.

b. Must have achieved the standard of physical fitness and aptitude as established by the Physical Education Section.
c. If suffering from a functional postural defect, must have achieved normal posture as certified by the school physician and the corrective teacher.
d. Boys must, in addition, be able to meet the Army physical standards for Class 1A.
e. Girls must also be able to meet the standards for those who participate in girls' athletic association activities.

This program with some modifications was first initiated in June 1942. Reports from the school indicate that it was successful in stimulating increased interest in physical fitness and in the achievement of greater skill, endurance, and physical robustness. Furthermore, a much better attitude and more co-operation in the correction of physical defects was manifested. Some schools reported almost 100% correction of dental decay and visual defects. A new spirit was shown in the determined attack on posture problems and musculo-skeletal defects.

* * * * *

Ultraviolet Lamps in Schools,—To the Editor:—I should like to ask about the advisability of installing special ultraviolet ray lamps in our centralized school for the prevention of air borne infections. The literature on this subject seems promising, but questions have arisen as to whether there would be any harmful effects from the ultraviolet rays, such as injury to the eyes or skin cancer. M.D., New York.

Answer—There is not sufficient evidence to sponsor unreservedly the use of ultraviolet lamps in schools for the prevention of air borne infections. Nevertheless it is well known that ultraviolet emanations of selected ray lengths are bactericidal at short distances. In the application of this knowledge to school buildings, the installations should be such as to rule out any likelihood of injury to the eyes, skin burns or like hazards, Journal of the American Medical Association, Vol. 121, No. 5, January 30, 1943, p. 382.

* * * * *

New Postal Regulation,—Members and subscribers are requested to notify this office if their address has been modified—and how—by the new zone marking system.

IMMUNIZATION PROCEDURES*

CLARENCE A. GREENLEAF, M.D.
Director of School Health, Cattaraugus County, N. Y.

The writer knows of no more satisfactory procedure than protecting pupils against smallpox, diphtheria or other illness that may be threatening a community and that can be prevented by prophylactic inoculation.

Smallpox vaccination and administration of diphtheria toxoid should be a routine procedure in the schools. In the Olean schools a recent survey shows over 75 percent have been vaccinated against smallpox, 81.5 percent have been protected against diphtheria, and 82.5 percent against typhoid. If the precautions that are commonly observed in such procedures are followed little difficulty will result.

Following the severe flood in Olean and vicinity in July, 1942 over 30,000 injections against typhoid were given with no serious reactions. Rarely unpleasant situations will result. I cite one case; Rose—a girl age ten. Vaccinated in 1936 with a primary reaction. Vaccinated May 11, 1942 with New York City laboratory vaccine No. 857. May 18 showed accelerated reaction. In school until May 29. Reported by mother as not feeling well on May 31, twenty days after vaccination. June 2 consulted Doctor and was taken to St. Francis Hospital. Reported to have had a convulsion with rigid neck. Reported to Board of Health as a case of *encephamyilitis*. The girl grew worse and died June 13. The certificate stated that death was caused by post vaccinal encephalitis due to cowpox virus. An autopsy was preformed and brain tissue sent to Rockefeller Laboratories, the National Institute of Health Laboratories, Washington, D. C. and Mount Sinai Laboratories. The laboratory findings proved death to be due to Tubercular Meningitis. In accordance with these reports the death certificate was corrected. If a careful analysis of this case had not been made, the death of this girl would have been attributed to vaccination. One can realize what this would have meant in carrying out further vaccination in the city.

It is not the purpose of this discussion to enumerate the procedures of immunization, so much, but to bring before you what the general attitude of the school personnel should be relative to the need of protecting pupils against communicable diseases. We all know the usual practices of protective clinics. Publicity, through the school system, to parents and Parent Teacher Association

*Presented to New York State Assn. School Physicians, Buffalo, N. Y., May 3, 1943.

groups. Written request by parents that such protection be given. Careful technique in the clinics. If we follow standard rules there will be little trouble.

State Aid to schools is rated upon pupil attendance per day. Since 1925 this rule has existed, therefore doctors and nurses employed by Boards of Education should use every means to prevent sickness and keep pupil attendance as high as possible. A days loss of attendance by a grade school pupil costs in loss of State Aid approximately forty cents, that of a high school pupil fifty cents. It is interesting to note that since 1925 the school loss in Olean by measles exclusion has amounted to over twelve thousand five hundred dollars. That of scarlet fever over six thousand seven hundred dollars. The last epidemic of diphtheria in 1919, if it had occured a few years later, would have been very expensive and the occurance of fifty cases of smallpox in 1929 was a considerable loss.

The question arises as to whose duty it is to give smallpox vaccination or diphtheria immunization. We, in the school medical department, are informed that it is the duty of the health department and not a school function. The writer does not agree with this idea. We believe that yearly clinics should be held in all schools for vaccination against smallpox and immunization against diphtheria. That it is one of our duties. Close relationship should exist in this work with the doctors and the health department.

It should be a partnership job. Only by such procedure can we justify our services to Boards of Education. Control of communicable diseases and every effort available should be carried out to keep pupils in good health. An efficient school medical service will more than pay its cost.

This is a discussion of school issues and with Dr. Burke's permission I wish to bring up one other phase of school health service to your attention. I refer to the Physical Fitness Program now in operation in our schools. We have over 600 boys in our high school who are being trained under this program. A few are excused because of heart defects and other conditions. These boys are not subject to the rigid examination which qualifies inductees for war service. They are however put through strenuous work. Many of them, especially the younger boys, do not have solid bone structure and are liable to injury. Epiphyseal seperations, joint injuries, hernias etc. may be expected.

It what way are we as school physicians responsible in these injuries?

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EDITORIAL

We are a neglectful people. We are continuously in the position of rushing to lock the stable door after the horse has been stolen. Our present furor over "Physical Fitness" is an outstanding example. For a generation our program in physical education —if it may be called a "program"—has consisted largely of running children through the gymnasium or play field mill, and there permitting them to do much as they choose. Anything he did not like—however beneficial it might be—he has not done. As a result, we have turned out a generation that is physically soft. Even the so-called athletes, when measured by modern tests of strength, endurance, stamnia, and general physical skills are found to be sadly lacking in what our youth should have to carry us, and themselves, through the present emergency.

One recent example—not unique by any means—a four year varsity basket ball player could pass only two of the battery of twelve tests which about 70% of the members of regular gymnasium physical fitness classes do pass.

Perhaps we have erred in calling the program physical education. The army may be on the better track when it calls the required physical program, which it insists men in training at the universities must have, physical training. Perhaps, in striving to be educational, we have lost sight of training the physical for the things a people must do in order to survive.

All of which brings us to another serious phase of this rush to make up for wasted opportunities.

How adequately are we guarding our youngsters from being actually harmed or perhaps becoming cardiac or renal cripples as a result of being pushed too rapidly into a strenuous physical program without adequate skilled supervision or even without a proper preceding physical examination? At the secondary school level, reports have come through that competitors on "varsity" football or basketball teams often show albuminuria or glycosuria immediately after an interscholastic game. These boys are supposed to have been "trained" and therefore able to stand prolonged physical strain. Usually they are not. How much more dangerous is it then to rush even less mature pupils into a program suddenly made compulsory and vigorous.

We come then to urging the need of more adequate and intensive physical examinations of all school pupils—elementary, secondary, and college, as a measure of prevention so that the badly needed more vigorous physical "training" may be carried out with safety. In the armed services, it may be necessary to wreck some vital organs in our haste to make effective soldiers and sailors, but there is no possible excuse for doing this in our schools as a measure of physical preparation preliminary to induction into industry or into any of the armed services. C. H. K.

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ABSTRACTS

The Blood Pressure of Adolescents,—Dr. Lawrence, who is school physician at Gould Academy, became impressed by the frequency of elevated levels of blood pressure readings taken during routine physical examinations and therefore decided to make further observations.

Before classifying a given blood-pressure reading as abnormal, it is necessary to know the normal reading for persons of the same sex and age. The blood pressure of adolescents should not be judged by adult standards. Blood pressure of normal children of the same age vary within wide limits, and the normal value may be best described as a range.

In order to determine whether a given blood pressure reading is normal, use was made of the statistical method of frequency distribution. The nearer the pressure of a given subject is to the average of all normal persons, the greater is the chance that his pressure is normal.

All subjects whose deviation indices were +2.00 or more were recalled for a second examination.

Beginning with this second observation, the average of three

or more readings was taken as the true reading. On the students whose deviation indices remained +2.00 or above, still further readings were made, including cold-pressor tests. In addition, information regarding the incidence of elevated blood pressure in the parents was sought.

As a result of his observations Dr. Lawrence reaches the following conclusions:

The drawing of definite conclusions regarding blood pressure from such a small number of observations is not in order. However, the following statements seem justified:

Blood-pressure determination should be part of the examination of students, but only if the readings can be checked at one or more later dates, for the pressures of adolescents are labile.

A certain proportion of students—9.5 per cent in this group—will show abnormally high pressures, as determined by the method of frequency distribution, after repeated observations. Most of these persons come from hypertensive families.

The frequency of abnormal pressor tests among these adolescents with abnormal pressure tends to confirm the impression that many of them are in a prehypertensive stage.

There is need for follow-up of subjects such as those described, in order to determine in later years whether elevated blood pressure and abnormal pressor tests during adolescence are truly indicative of a prehypertensive state. Homer E. Lawrence, M.D., in The New England Journal of Medicine, March 12, 1943. Abstracted by Fredrika Moore, M.D.

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Give the Boys a Chance,—The Boston School Committee has voted unanimously to amend a former ruling so that now "Pupils absent, tardy or dismissed with the approval of the principal of the school or district for treatment by an authorized dentist or physician shall be counted as present". By so doing they have given the children of Boston encouragement in seeking dental care as their own responsibility and at their own expense.

If a child is taken from a class and sent to a free clinic, whether he cares to go or not, he may get valuable service. But, will he profit by it as he would if he were educated to a desire for sound teeth even to the extent of selecting his own dentist and paying the cost of dental care.

Many dental programs have persisted for years in giving all children up to the fifth or sixth grades complete dental care only to find that less than 1/3 of the high school pupils have bothered to see a dentist since they were no longer eligible for the free

clinic.

Parents and pupils both have frequently been given more encouragement to support clinics than instruction and encouragement in the advisability of taking the responsibility of dental health as a personal activity.

Is your town dental program teaching the value of dental care or is it showing the people where they can get dentistry below cost or for nothing? This latter does not encourage the dentist to do good dentistry nor does it encourage the parents and children to develop good habits and practices.

Will your school committee do as much as Boston's?* Prepared by Florence B. Hopkins, M.D., D.M.D., Department of Public Health. From Contact, Massachusetts Department of Public Health.

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Nutrition Problems of University Students,—Basing his views on a survey of the nutritional problems encountered in the general student body of the University of Minnesota, Major B. A. Watson, M. C. of the Nutrition Clinic, University of Minnesota Students' Health Service, states that the main nutritional problems are those of obesity and undernutrition. Dr. Watson observes that too little consideration has been given heretofore to the matter of bony framework and body build of the individual in determining whether he is over or underweight. He assumes in his discussion that the patient has had a complete physical examination to rule out definitely any cause for nutritional disturbances.

The following interesting formula drawn from Dr. Diehl's book, *Healthful Living*, is given which enables the physician to calculate rapidly the ideal weight for adults over 15 years of age:

"Ideal weight for males: Age, plus 100 plus 3 lbs. per inch over 5 feet. Example: Male age 20, 5 ft. 10 inches tall: plus 3 lbs. per inch over 5 ft. equals 150 lbs.

Ideal weight for females: Age, plus 100 plus 3 lbs. per inch over 5 feet minus 5 lbs. Example: Female age 35, 5 ft. 6 inches tall: 135 plus 18 minus 5 equals 148 lbs.

Variations of 10 to 20 percent above or below these calculated ideal weights, may be allowable depending on body build, before the state of obesity or undernutrition is diagnosed. The real age is used up to 35 years, but after that the figures remain at 35 for both sexes."

In his discussion of obesity as the first of the two main nutritional problems, Dr. Watson suggests two divisions: The

*Contrast this with the rule of the New York State Board of Regents rule whereby *all* absences are deducted on a per diem basis from the amount of state aid paid.—Ed.

first, overeating, in which the individual consumes more calories each day than are expended in normal activity, which condition may best be remedied by dietary restriction. The second type of obesity, glandular disturbance, is due to conditions beyond the control of the patient and is usually the result of an underfunction of the thyroid gland or dysfunction of the pituitary or gonads. The author states that "glandular obesity, fortunately, occurs in a comparatively small number of cases," and that the giving of thyroid extract to obese patients should be reserved "for those cases in which other signs and symptoms of definite, even though mild, clinical or subclinical myxedema exists." The author does well to note that the routine prescribtion of large doses of thyroid extract has the two detrimental effects of increasing metabolism, thereby increasing appetite, and of "giving the patient a false sense of security that medicine rather than diet will reduce weight."

Dr. Watson stresses the fact that the speed of reduction is not nearly so important as continued reduction, and he recommends the education of the patient so that when the desired weight is reached, it can be maintained.

The second of the two main nutritional problems under discussion is undernutrition which Dr. Watson feels is more difficult to correct than overnutrition. "It is extremely difficult to obtain satisfactory results with treatment of patients who are underweight in spite of adequate food intake—hygienic measures, such as increased periods of sleep beyond seven to eight hours and less exercise, serve, in our experience, no lasting purpose." Those individuals however, who are underweight because of a sense of fulness shortly after even minimal amounts of food are taken show results when placed on a diet containing high caloric foods taken in four to six feedings rather than three. And those who are underweight because of an admittedly poor appetite should—

(1) be given lists of foods of high caloric value;
(2) restricted fluids at meal time;
(3) be given certain gastric stimulants such as alcoholic elixirs;
(4) should be encouraged to masticate food thoroughly so that it may be properly utilized.

"In summary, there are certain underweight patients who will gain on a definite regime and others whose weight it is impossible to increase with our present knowledge of metabolism and nutrition."

The conclusion was reached after a careful study carried on at the University of Minnesota Students' Health Service that vita-

min therapy is of no value in stimulating appetite or the gaining of weight. Neither can insulin therapy be recommended by the author. Even though it does produce an increase in appetite with a resultant weight increase during active treatment, on cessation of therapy the appetite returns to its former level and the weight is usually lost.

Dr. Watson has cited practical information concerning the ever-present problems of Obesity and undernutrition. His studies are sound and point the way toward an increased knowledge of metabolism and nutrition in the future in which education of the individual will play an essential role. From Journal Lancet, March, 1943, page 59. Author Maj. B. A. Watson, M.C. Abstracted by Marvegn Cloud Cockfield, Nutritionist, Wayne County (North Carolina) Health Department.

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Effective School Health Service,—New York City has from time to time conducted studies of its school health service. The latest research was the Astoria School Health Study completed in 1941. Dr. Wheatley was a participant in this study. "The basic principle which governed the Astoria Study was to discover if possible the most efficient methods of conducting the school medical service and still keep within the bounds of good pediatric practice."

Dr. Wheatley discusses three ways in which the school health service may meet the challenge of effective economic operation. Increased efficiency in record keeping, conservation of the school physician's time, and better utilization of community medical resources are proposed by Dr. Wheatley.

The loss of the child's medical record was frequent before he reached the fifth grade. This was explained because of frequent yearly moving from school to school. A plan whereby the parent is given the medical record with the academic record to take to the new school has been worked out. It is said records are not lost now since the child cannot be admitted without these records.

One fifth of the nurse's time is spent on records. This should be reduced. The question of non-professional record keepers, different color cards for the sexes, metal tabs of assorted colors has been settled and is helpful. The matter of having both doctors and nurses put down pertinent information is important.

Today with the scarcity of physicians the time which the physician is able to give becomes a very important matter. All things that can be done by non-medical personnel should be. When the physician's load is too great, it militates against careful examina-

tions. Screening or case finding procedures so that children most in need of the physician's judgment can be culled from the hundreds of well children in the school are a time saver. Since the physician can never hope to supervise closely every individual in his practice or in the schools, the screening process is helpful. Classroom teachers and nurses cooperate in this endeavor. In Astoria, it was found that eight out of ten children selected by classroom conference when examined by the school physician were found to have a health problem requiring further medical attention. This screening process with reference to heart conditions was shown not to be a problem. The New York City Health Department has done three things during the past four years with reference to school health. It has had a staff education program to teach pediatrics to public health physicians and nurses. It has succeeded in having 89 percent of the mothers present at the examinations of children. A personal history is obtained either from the parent or from some one in the home in each case.

The Astoria Study developed great interest in private physicians participating in the school health program. The family physician has been encouraged to continue the same interest and care of school children as he did when they were preschool children. The New York City Health Department has always favored examination of children by their family physicians. The private physician is playing an ever increasing role in the school health program in New York City and is likely to assume greater importance. It is incumbent upon him to take these examinations seriously and be sure that their importance is not in anyway minimized. Physicians are now recognizing the very real influence that schools have in the child's growth and development. If the private physician cooperates and guides the schools with reference to this problem, it will be mutually advantageous.

The school's function is to educate the child and the family in good health practices. The private physician must play an important part if the schools are to attain any degree of success in this program. Ways to More Effective School Health Service by George M. Wheatley, M.D., Assistant Medical Director, Metropolitan Life Insurance Co., New York State Journal of Medicine, March 15, 1943. Abstracted by John E. Burke, M.D.

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Teachers Should Play,—Never have teachers been asked to carry a heavier load than now. Never have curricula changed with such bewildering rapidity. Never have school people been so inseparably a part of a total war experience as today.

These things will take their toll. Health is likely to suffer.

Nervous afflictions are apt to increase; chronic fatigue will be aggravated; colds and other ailments will be more frequent. Some months this year have seen 30% more daily sickness absences than the same months last year.

How can these unfortunate results be neutralized? There are two remedies: rest and recreation. Teachers must rebudget their time. Hours formerly spent on relatively nonessential activities must be devoted to play and rest.

Employers of aircraft workers have discovered that all work and no play makes Jack an inefficient worker. And they are doing something about it. For example, the Boeing aircraft plant in Kansas has built a large recreation park for its workers. "A nine-hole golf course, tennis, badminton, volleyball and shuffleboard courts, ping-pong, target practice, trap-shooting, archery, and movies are open to employees and their families". There are parties and bridge games, baseball and other sports—all free!

Many other employers have seen the light. They realize that men and women are not machines; they need rest and recreation as well as fuel and lubrication.

Are teachers any less human than aircraft workers?—
Editorial in Health Education, April 1943, Published by Los Angeles City Schools.

GRANT FELMING, M.D.,—Dr. Grant Fleming, head of the Department of Public Health and Preventive Medicine at McGill University died at Montreal on April 9, 1943, soon after being called to service in the Royal Canadian Army Medical Corps. and placed in charge of preventive medicine in the army.

At this time of emergency when his skill, knowledge and experience is so much needed, this is a great misfortune. For many years, practically from its formation, Dr. Fleming had been a member of the American Association of School Physicians and of its successor, the American School Health Association. He will be missed.

BIBLIOGRAPHY

General

Safeguarding Health of Children in Wartime. *Clifford, M. L., M.D.* Connecticut Health Bulletin, State Department of Health (Hartford) 56: 281-84, December 1942.

School Children in Wartime. *Despert, J. L., M.D.* Journal of Educational Sociology (New York City) 16: 219-30, December 1942.

What the Teacher Should Know About Sanitation of Food and Eating Facilities in the School. *Segre, E. L.* College Health Review, Division of Hygiene and Public Health School of Medicine, Howard University (Washington, D. C.) 7: 1-4, December 1942.

Health Education

"Radio in Public Health Education", Virginia Medical Monthly (Richmond) 70: 44-46, January 1943. Need for authoritative radio breadcasts sponsored by local medical societies. Groom, Dale.

"Health Exhibits for Fairs and Expositions", Hygeia (Chicago) 21: 96-97, 132-33, February 1943. Hull, T. G., Ph.D.

"Health Education Status of High School Pupils and Need for Coordinated School Health Programs", Journal of School Health (Buffalo) 13: 1-8, Jan., 1943, Latimer, J. V.

"Significant Findings of the Massachusetts High School Study and Their Implications for Health Education Programs", Journal of School Health, (Buffalo) 13: 9-17, January 1943. Turner, C. E., Dr. P. H.

Health Education Grows up From Disease Prevention to Building Bodies and Minds. C. E. A. Winslow, Dr. P. H. Channels, National Publicity council for Health and Welfare Services (New York City) 20: 10-12 February 1943. From Library Index.

Physical Fitness for the Victory Corps Through Health Education. Monthly Bulletin, Indiana State Board of Health (Indianapolis) 45: 292-94, December 1942.

Health Service

What Value has Orthoptic Exercise in the Treatment of Strabismus and Related Conditions? Fowler, Mary J. American Journal of Ophthalmology (Cincinnati) 25: 1502-06, December 1942.

Have We Failed in the Physical Examination of School Children? Schwehn, H. M. Hoosier Health Herald, Indiana Tuberculosis Association (Indianapolis) 24: 37-41, 44, December 1942.

The Impact of the War Upon the School Health Program. Uhler, W. P., Jr. Journal of Educational Sociology (New York City) 16: 411-16, March 1943. From Library Index.

School Nursing

Rural Schools Stress Parent Participation. Jung, E. M., R.N. Public Health Nursing (New York City) 35: 52-54, January 1943.

School Nurse Recruits Student Nurses. Scratch, T. I., R.N. Public Health Nursing (New York City) 35: 41-43, January 1943.

*Periodicals**

"Day Care Programs for School Children". Contact, Massachusetts Department of Public Health (Boston) 8: 2-4, October, 1942. Chamberlayne, A. M.

"The Community School Lunch", Everybody's Health (St. Paul) 26: 6-7, December, 1942. Leonard, Mrs. P. H.

"Mr. College President, What About Your Physical Fitness Program?" College Health Review, Division of Hygiene and Public Health, School of Medicine, Howard University (Washington, D. C.) 7: 1-2, November, 1942.

"Nutritional Requirement in Infancy and in Childhood". American Journal of Diseases of Children (Chicago) 64: 898-918, November, 1942. Butler, A. M., M.D.

"Vitamins for the Prevention of Colds", Journal of the American Medical Association (Chicago) 120: 268-70, December 19, 1942. Cowan, D. W., M.D., Diehl, H. S., M.D., and Baker, A. B., M.D.

"The Industrial Cafeteria—a School for Nutrition", Journal of the American Dietetic Association (Chicago) 19: 840-41, December, 1942. Kelly, M. C.

"Geographic Contrasts in Tuberculosis in Adolescence and Maturity", Statistical Bulletin, Metropolitan Life Insurance Company (New York City) 23: 5-8, November, 1942. Baker, L. E., M.D.

"A Health Program—With Hand-Made Lantern Slides", Educational Screen (Chicago) 21: 390, December 1942. Gale, Ann.

*This is a list of books, journal, reports, etc., chosen as useful material for essential acquisition and collateral reading selected from publications of 1941-42, annotated and approved by the American Academy of Pediatrics. Current Pediatric Literature 1941-1942, Hugh McCulloch, M.D., St. Louis, Mo., in Part II The Journal of Pediatrics, November, 1942, C. V. Mosby Co., St. Louis.

"Health Education in the Regina Normal School", Canadian Nurse (Montreal) 38: 941-42, December, 1942. Health education in Saskatchewan normal schools. Smith, Elizabeth.

"Emotional Stability for the Deaf Child", Volta Review (Washington, D. C.) 44: 685-88, 724, December 1942. Leigh, J. W.

Tuberculosis

Control of Pulmonary Tuberculosis in Mental Hospitals. Berrington, W. P., M.D. and Greenwood, C. E. Lancet (London) 243: 752-53, December 26, 1942.

Discussion on the Control of Tuberculosis as an Infectious Disease. Proceedings of the Royal Society of Medicine (London) 36: 39-42, November 1942.

The 1941-42 Tuberculosis Findings in Schools. Guthrie, W. G., M.D. Public Health News, New Jersey State Department of Health (Trenton) 26: 172-75, December 1942. New Jersey Findings.

Scientific Basis of the Tuberculosis Movement. Lees, H. D., M.D. Health Pilot, Washington Tuberculosis Association (Seattle) 25: 5-7, December 1942. (To be coninued).

Possibility of Artificial Sensitization to Tuberculin. Levine, M. I., M.D. and Sackett, M. F., R.N. American Journal of Diseases of Children (Chicago) 64: 1014-22, December 1942.

The Untrained Patient Remains Uncured. Lincoln, L. A., R.N. American Journal of Nursing (New York City) 43: 64-68, January 1943. Education of the Tuberculous Patient.

War Challenges Rehabilitation of Ex-tuberculosis Patient. Ruddick, W. J. Hoosier Health Herald, Indiana Tuberculosis Association (Indianapolis) 24: 42-43, December 1942.

Spending Seal Sale Money Wisely. Bulletin, National Tuberculosis Association (New York City) 29: 5-12, January 1943. Reports from various states.

Tuberculosis Deaths and the War. Stocks, Percy, M.D., D.P.H. British Medical Journal (London) p. 750-51, December 26, 1942. Figures for England and Wales, 1924-1942.

Problems of the Health Officer. Tuberculosis in Industry. Thompson, I. F., M.D. Wisconsin State Board of Health, Quarterly Bulletin (Madison) 7: 13-17, October-December 1942.

X-ray Survey at Philadelphia Navy Yard. Bulletin, Pennsylvania Tuberculosis Society (Philadelphia) 23: 1, November-December 1942. Survey of Civilian Employees.